

Fire Regime Condition Class (FRCC) Interagency Handbook

Reference Conditions

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Date: 13 January
2005

PNVG Code: NHDW2

Potential Natural Vegetation Group: Conifer Northern Hardwood Forest

Geographic Area: Appalachian Mountains south to northern GA. Also New England, NY, and the northern parts of PA.

Description: Mesic to somewhat xeric sites over a broad range of topographic conditions including ravines, valley flats, sheltered low ridges, open north-facing slopes at high elevations, and steep, exposed slopes. Soils are usually acidic and species diversity tends to be low. The characteristic species are eastern white pine (*Pinus strobus*) and eastern hemlock (*Tsuga canadensis*); this includes both pine-hemlock forest and pine-hemlock-hardwood forest. Dominant associates include sugar maple (*Acer saccharum*), paper, black, and yellow birch (*Betula papyrifera*, *B. nigra*, *B. allegheniensis*), beech (*Fagus grandifolia*), and northern red oak (*Quercus rubra*); American chestnut (*Castanea*) would have been a co-dominant before its near-extirpation. Other common associates include striped maple (*A. pennsylvanicum*), red maple (*A. rubrum*), mountain maple (*A. spicatum*), white ash (*Fraxinus americana*), black cherry (*Prunus serotina*), Canada yew (*Taxus canadensis*), basswood (*Tilia americana*), and American elm (*Ulmus americana*).

Fire Regime Description: Fire Regime Group V. Fire disturbances are severe and affect large patch sizes. Surface fire is extremely rare, at 1,000 year intervals, while replacement fire is more frequent at 300 to 1,000-year intervals. Other disturbances, including windthrow, insect attack, and ice storms, are more important than fire although they may pre-dispose the forest to fire during drought conditions. They are more frequent than fire but affect a smaller percentage of the stand.

Vegetation Type and Structure

Class*	Percent of Landscape	Description
A: post replacement	15	Young stand characterized by paper, black, and/or yellow birch, white pine, and red maple, with white ash in the south; less than 50 yrs old
B: mid-seral closed	15	Intermediate stand dominated by beech, white pine, yellow birch, and sugar maple, with northern red oak in the south; 50 - 200 yrs old
D: late-seral open	30	Mature stand characterized by more white pine than hemlock, with beech, sugar maple, and yellow birch; 200 – 350 yrs old
E: late-seral closed	40	Mature stand characterized by more hemlock and less to no white pine, with beech, sugar maple, and yellow birch; over 200 yrs old
Total	100	

*Formal codes for classes A-E are: AESP, BMSC, CMSO, DLSO, and ELSC, respectively.

Fire Frequency and Severity

Fire Severity	Fire Frequency (yrs)	Probability	Percent, All Fires	Description
Replacement Fire	725	0.0014	56	Crown fires kill most or all trees, resetting succession to A, early seral post-replacement.

Non-Replacement Fire	900	0.0011	44	Fires pass through the understory and cambium-kill most smaller trees but leave large, well-established trees alive.
All Fire Frequency*	400	0.0025	100	

*All Fire Probability = sum of replacement fire and non-replacement fire probabilities. All Fire Fire Frequency = inverse of all fire probability (previous calculation).

References

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PERSONAL COMMUNICATION (if applicable):

Peer Review by Steve Croy, Forest Ecologist, George Washington and Jefferson National Forest, Roanoke, VA, at Shenandoah Nat'l Park, Luray, VA: 21 April, 2004, and by Bill Patterson III, University of Massachusetts Amherst, Amherst, MA, at Milwaukee, WI: 20 July, 2004.

VDDT File Documentation

Assumptions: Native American fire was considered but not determined to be a significant factor.



